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Dr. Joshua Lederberg The Rockefeller University 1239 York Avenue New York, NY 10021-6399 AUG 7'1

Dear Dr. Lederberg:

Thank you for your brief note. I have enclosed a copy of the <u>Development and Change</u> article complete with page 62. As for the footnote #3 I believe there is some reason for concern regarding US military research on biological warfare, especially after the wholesale chemical warfare that the U.S. used in Vietnam (defoliation). Also, as you know doubt know there are the persistent rumors and charges that the US released dengue fever on Cuba. The Cubans also assert that the US has attacked their tobacco crop with diseases as well as the Cuban pig industry. Very obviously, LDCs with weak economies and inadequate veterinary services, etc. are extremely vulnerable to biological warfare and it also well known that the US military is funding a great deal of research on tropical diseases such as Rift Valley Fever, etc. As for the remark regarding deliberate release, it seems likely that if there is any testing of organisms by EPA it will be in the environments of the temperate US climates and not the tropical climates. Will this make any difference? Who can say?

I have included a number of other articles that I and colleagues have written recently. I believe that you have a very big job in trying to help ICGEB get going. The choice of correct research targets will be very difficult given the enormity of the problems facing LDCs. It seems that a major problem will ensuring that the inventions made by ICGEB have a proper distribution mechanism so that they do not merely remain inventions on the shelf. I assume that one of the targets will be vaccines for tropical diseases, but with this goes the question of how far the scaleup/development path can ICGEB go. To merely make a prototype vaccine at the lab level will only be of benefit to a few very sophisticated LDCs that can manage scaleup. However, to go forward with scaleup will be very costly in terms of ICGEB's already limited resources. What is the proper point at which to turn over discoveries etc. to the national program? I am not so sure that the agricultural research centers are the best model, because they have always been able to use the Third World countries' agricultural extension programs. These are not available in pharmaceuticals and especially chemicals (public health systems may be a parallel to ag extension). Also, the character of agricultural products is that the seeds reproduce themselves, so that once the farmer gets the new seeds he need not get more. However, vaccination programs require constant operation for the new members of the population. The enormity of the problems of setting up a new center are staggering. I wish you the best of luck in this crucial undertaking.

Sincerely

Martin Kenney